

Conference Topics Addressed:

- 1 Advanced image processing
- 2 Image mapping

RADARSAT PROCESSING SYSTEM AT ASF

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Radarsat is a Canadian polar orbiting remote sensing satellite scheduled for launch in September 1995. Its lone instrument on-board is a synthetic aperture radar (SAR) that is capable of operating in a number of imaging modes including the first operational ScanSAR mode. As one of the data reception, processing and archive facility for Radarsat data, Alaska SAR Facility (**ASF**) has responded to its Science users by establishing a Radarsat processing system to handle the data processing of all Radarsat modes. This task involves enhancements to the high throughput hardware based Alaska SAR Processor (**ASP**) to handle standard mode Radarsat data in addition to its existing ERS and JERS capabilities, the addition of the new ScanSAR Processor (**SSP**) to process the Radarsat **ScanSAR** mode data, and the introduction of a Precision Processor (**PP**) to accommodate the special Radarsat modes such as fine resolution and wide swath. For raw data ingestion and distribution to the appropriate SAR processor, a new Control Processor (**CP**) and Raw Data Scanner (**RDS**) subsystem is also incorporated.

This paper outlines the **ASF** Radarsat data processing requirements as driven by the Science users, and describes in detail the Radarsat processing system design and implementation approach to meet the challenge of providing **ASF** an integrated operational SAR image production facility that handles the volume and complexity of Radarsat data as well as continues to serve ERS and JERS. Specific design and implementation attributes that facilitate system growth in handling future SAR missions such as **Envisat** and **HIROS** are **also** addressed,